

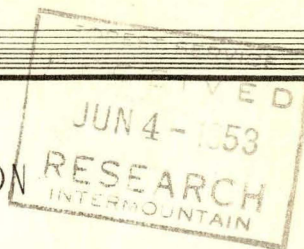


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STRIP SAMPLE VERSUS CIRCULAR PLOTS FOR MEASURING MORTALITY

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Two circular, $1/3$ -acre plots spaced 5 chains apart are preferable to a strip 1 chain wide and 7 chains long for measuring forest mortality. This conclusion is based on 34 paired samples taken in Bonneville, Madison, and Teton Counties in Southeast Idaho in 1950. The samples were measured by a forest survey field crew in the course of taking forest inventory data.

The "strip sample" consisted of a strip $1/2$ chain on both sides of a 7-chain line transect. The "plot sample" consisted of two $1/3$ -acre plots also located along the 7-chain transect. The first plot was located 2 chains from the starting point and the second plot was 5 chains from the first. All trees 5.0 inches d.b.h. and over estimated to have died within the last 5 years were tallied by species, 2.0-inch d.b.h. class, and 5-foot height class on both the strip and the plots.

Comparison of the mortality on the 34 pairs of circular plots with that on the 34 strips showed only 9.7 cubic feet more dead volume an acre on the strips. A statistical test ^{1/} proved this difference to be insignificant. Fieldmen working alone prefer the circular plot sample for three additional reasons:

1. One man can tally trees on the 2 plots in about half the time he can tally the strip.
2. A man working alone has less difficulty determining the boundary of the plots since he has only to measure out from the center stake. In measuring the strip, each time a tally tree occurs on or near the strip boundary the fieldman must stake one end of a tape on the center line and measure out.
3. There is less perimeter involved in the 2 circular plots than would be necessary to enclose the same area in a strip 1 chain wide. The tallying of trees along the plot boundary presents the greatest source of technique error in taking samples. The 2 circular plots have 18 percent less perimeter than the same area enclosed in a strip 1 chain wide and hence involve less chance to include trees that should have been excluded and vice versa.

^{1/} Respective statistics for circular plots and 1-chain strips: Mean volume of mortality an acre 63.9 and 73.6 cubic feet; variance 7,071 and 10,029; $t = .60$ on 66 degrees of freedom.